1:Murphy and Quain E-4,5 (1938) 1955
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line by canoe would involve a journey of several hundred miles through mostly uninhabited country. The southern approach is the only feasible one for surface transportation. Even this is difficult as canoes and pack animals are needed after leaving Cuyabá. Between that city and the upper Xingú, the Planalto de Matto Grosso intervenes. This is an extremely rugged upland, hard to traverse. The isolation of the area made difficulties for ethnologists, but these were more than compensated for by the intactness of the native cultures. The establishment in 1947 of an outpost and airstrip of the Fundação Brasil Central, located below the juncture of the Kuluene and Kuliseu rivers, has done much to overcome the physical obstacles. The near future should see a considerable increase in ethnographic data from the headwaters of the Xingú.

In 1938 the Trumaí village was situated on the Kuluene River near its juncture with the Kuliseu. The Kuluene is the easternmost of the six parallel rivers that form the headwaters of the Xingú. The Xingú, itself, is one of the largest of the rivers tributary to the Amazon. It joins the Amazon about two hundred miles from the mouth of that river, after flowing from south to north for approximately one thousand miles. The six rivers which flow parallel to each other for over two hundred miles and then join to form the Xingú are, from east to west, the Kuluene, Kuliseu, Batoví, Jatobá, Ronuro, and Steinen rivers. They rise in the uplands, flowing through plains country and gallery forest. Further downstream they widen out and begin their descent into the tropical rain forest. The open country between the streams diminishes and the area covered by forest increases. The terrain is flat with but slight elevations between the rivers. Opening on the rivers are marshy subsidiary streams and large systems of lagoons which extend for several miles. Adjacent to the Kuluene and Kuliseu are broad sections of periodically inundated savannah lands, which are little used by the Indian population.

The heavy rains from October to April have the same profound effect upon the annual cycle of life here as they do in other sections of the Brazilian rain forest. Of great importance, also, is the effect of the rains upon the soil. The rains are too heavy to allow the surface soil to retain them. The water runs off or sinks deeply into the loose earth, leaching the surface of minerals and making it poor for agriculture. Since no form of mineral replenishment is used, a garden plot becomes exhausted in about two or three years, or after two plantings.

Nevertheless, the rain forest is suitable for primitive agriculture, since the looseness of the soil makes it ideally adapted to the primitive tools in use. As the open grasslands in this section of South America have extremely poor soil and cannot be tilled with simple hand tools, the Trumaí, like other tropical forest peoples, are forced to make their gardens in forest clearings in locations that are not flooded annually.

[Text continues on p. 7]

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The rapid exhaustion of the soil forces them into a life which, although not nomadic, involves frequent moves. As the soil in old plots is exhausted, new ones have to be opened up. The area of exploitable land around the village is limited by the need to transport the produce and protect the villagers from their enemies. Thus, after the land available to the village has been used, the group moves.

The main subsistence of the nine village groups now living in the upper Xingú area is derived from this typically Amazonian shifting horticulture coupled with fishing in the extensive streams, lagoons, and estuaries. Apparently, the population of the region was never great enough to cause any pressure on land or other resources. Each village maintained exclusive rights of exploitation over certain waterways and areas of land within which the village always moved. There evidently were not, and still are not, any clearly defined territorial boundaries; but village rights are implicitly recognized.

The Neighbors of the Trumaí

Although there is considerable uniformity in the cultures of the upper Xingú tribes, their linguistic affiliations are diverse. The main language stocks of aboriginal Brazil are represented. On the Kuluene River are the linguistically independent Trumaí and the Cariban Kuikuru, Kalapalo, Tsuva, and Naravute. Near the waters of the Kuliseu River live the Tupian Kamayurá and Auetí, the Arawakan Mehinaku and Yaulapití, and the Cariban Nahukwa. The Batoví River is inhabited by the Arawakan Waurá and Kustenaú.[1] All these villages maintain a rather distrustful peace among themselves, but live in fear of their hostile Gê- and Tupian-speaking neighbors on the perimeters of the upper Xingú drainage area.

The upper Xingú "tribes" consist of one village each. It seems evident from the linguistic heterogeneity of the region that it is a *cul de sac* — one of the aboriginal refuge areas which characterize the cultural landscape of the headwaters of the Amazon and its tributaries.

The cultural uniformity of the above peoples has impressed all observers, as has the extensive contact that they maintain with each other. Descriptions of this homogeneity are to be found in von den Steinen[2] and, latterly, in Galvão[3] and Oberg.[4] Among the principal material traits which distinguish the area as opposed to neighboring, but outside, groups are: haystack-shaped houses arranged in a circle around a central plaza; bark canoes; dependence upon fish for protein;

[1] Oberg (1953, p. 4) states that the Yaulapití, Kustenaú, Tsuva, and Naravute no longer live in independent villages, but reside among other groups, usually of the same linguistic family.

[2] Von den Steinen 1886. [3] Galvão 1949. [4] Oberg 1953.

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The plaza was the center of Trumaí social life. Here guests were entertained, ceremonials and wrestling matches were held, and the men gathered daily. Although the women might sit in front of their houses and watch these activities, they were not allowed to come near the log bench, even when the men were not there. The plaza of the Trumaí village was also used as the burying ground.

A short distance north of the circle of houses, on the path to the two main garden clearings of the Trumaí, was another smaller clearing used during the *ole*, or manioc, ceremonies. Other paths radiated outward from the village to the other gardens and to nearby groves of *piquí* trees. Quain noticed that the paths leading to the Kamayurá village were much broader and cleaner. The Kamayurá were proud of their paths and kept them in good condition. Their plaza was also clearer of weeds and trash than that of the Trumaí.

Of the four completed houses in the village, two were as large as those of the Kamayurá, but the other two, which were much smaller, were considered by Quain's informants to be genuinely Trumaí in type. Insofar as is known, the details of the construction and shape of all four were substantially the same. They had an elliptical floor plan and were haystack-shaped. Although the side walls were only four feet high, the roof attained a height of fifteen feet. The silhouette of the house was an almost smooth curve from ridge pole to ground. The frame was covered with a grass thatch. There were no windows, and a single entry opened on the plaza.

Each family occupied its own section of the house and had its own fireplace. Personal belongings hung from the walls and ceilings or were placed on small shelves. Hammocks were hung between the side wall posts and the two center posts, the woman's hammock beneath that of her husband. Except for two nuclear families that screened off their sections with blankets and cloth given them by Quain, there was no internal division of the house.

The two largest garden clearings were situated respectively about one mile northeast and one mile northwest of the village. Three small ones were located southeast of the settlement. In order of size, the gardens were named Nariatan, Waniwanitan, Anariatan, Tan Toreake, and Tandatake. Nariatan, the largest, contained, by Quain's rough calculation, approximately seven acres divided into ten plots, representing the gardens of seven men. One plot contained two acres, but the average garden varied between one-fourth and one acre in size. One of the men had erected a temporary thatch shelter in his plot, providing protection from the sun, but not from the rain. Inside there was only a basket of manioc flour, a rack for cooking fish, and a large shallow pot into which manioc was grated. This was the sole garden shelter Quain saw, and, significantly, it belonged to the most industrious horticulturist in the village.

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The path which led from the village to Nariatan, the northwestern garden clearing, passed through the previously mentioned ceremonial clearing north of the village. A short distance beyond this point, a branch took off to the east and led to Waniwanitan, the northeastern and second largest clearing, which contained nine garden plots totaling approximately five acres. Each garden was tilled by a different man, but two men had plots in both Nariatan and Waniwanitan. The size of the average garden was one-half acre. There was no newly cleared land, and, in contrast to Nariatan which was still yielding, nearly all of the crop (mostly manioc) had either died or been harvested. Quain noticed that the soil in Nariatan had a gray tone, whereas that of Waniwanitan was reddish in hue. This difference in color was due to the ashes deposited by the more recent burning over of the former site.

Nariatan was a newer garden than Waniwanitan, and the former was planted to a variety of crops while the latter was nearly all in manioc. This is indicative of the common tropical forest slash and burn system whereby second year gardens are used only for manioc growing, and new areas in which the soil is still comparatively rich are used for other vegetables in addition to manioc. The Trumaí are unique, however, in that the garden clearing was divided into individually owned plots. Smaller individual gardens or large gardens cleared and cultivated collectively are the general rule in the rain forests of South America.

The three other clearings were small, and each contained one garden plot. One was one-quarter acre in size, while the other two each comprised one-half acre. These small gardens were connected with the village by separate paths and were closer to it than the two larger clearings. Anariatan, Nariatan and Waniwanitan were named after old village sites, but Quain knew of no abandoned locations from which the names Tan Toreake and Tandatake could have been derived.

Horticultural Techniques

It is difficult to assess the relative importance of horticulture, fishing and gathering in the subsistence economy of the Trumaí. At different times of the year each made the major contribution to the diet. Most garden products became available at about the middle of the rainy season, but manioc was dug up when needed throughout the year. Fish and manioc were staples the year-round, although fishing was poorer during the rains. Each was more important in the total diet than were the products of gathering. However, the subsistence of the Trumaí at certain times of the year, especially in the early part of the rainy season, would have been seriously threatened without the wild foods.

The agricultural cycle started in the early part of the dry season when the clearings needed for the next rainy season's gardens were made.

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The usual procedure was for each man to clear a garden plot adjacent to the others; in this way the two large clearings of Naristan and Waniwanitan were created. The three isolated small clearings might have been nuclei for future large clearings.

All the trees in the plot to be cleared were felled, and the underbrush was slashed away. This has been done with steel axes since the upper Xingú Indians came in contact with the outside world. Quain noted that much more work must have been involved in clearing the forest when stone axes were used. Even with improved implements, clearing land was the most arduous work done by the Trumaí. Stumps were not uprooted, nor were the fallen trees and shrubs removed. The dead vegetation was allowed to dry, and the plot was burned over just before planting in September. When planting, the Trumaí followed the simple expedient of avoiding burned tree trunks and stumps. One year old garden plots were made ready for replanting simply by pulling out or chopping down weeds.

The heavy work of clearing the land fell to the men. In one case reported by Quain, two men from the same household cleared a plot jointly, but in all other instances each garden was cleared by one man.

Permanent rights to land resided in the community as a whole, but gardens were spoken of as belonging to the man who had cleared the land. He also had proprietary rights over the crops, even when he had not planted them himself. Generally, however, such fine points of property were not an issue, as the man who cleared the land usually planted it. Land tenure was a function of use only.

Absolute, permanent ownership of property in land would have had no purpose, as the gardens were temporary and were abandoned when the soil was exhausted after two consecutive plantings.

The planting season began after the first light rains and lasted from about the middle of September to about the second week in October. The first heavy daytime rains arrive at the beginning of October and become more frequent throughout the month. Thus the sowing was done after the earth was moistened, but before the rains arrived in full force.

Quain made note of a variety of food plants growing in the Trumaí gardens. These included bitter manioc (*ole*), corn (*xotet*), squash, large beans (*kuman*), small beans (*kumana'i*), sweet potatoes (*mani*), sugar cane (*kanaviya*), a species of pineapple (*vasus ruyau*), and banana trees (*tsi idatdat*). Among the domesticated non-food plants were tobacco, cotton (*amundyu*), the castor bean (*patasy*), and *urucú*(*maidot*). Quain believed that the castor bean was used for the round hollow point of the whistling arrow, but Oberg says that the Kamayurá make theirs with hollow nuts of the tucúm palm.[1] *Urucú* is a plant bearing a pod, the

[1] Oberg 1953, p. 31.

1:Murphy and Quain E-4,5 (1938) 1955
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249 Urucú is a plant bearing a pod, the
386 interior of which yields a red paint used in body painting and the decoration of artifacts.

244 Bitter manioc was by far the most important crop, while maize and
[243] sweet potatoes ranked second and third, respectively. Most of the crops were planted in the same three-to-four-week period, but the gardener usually planted manioc before the other vegetables. For this purpose, holes were dug at six to ten foot intervals wherever space between the charred logs permitted. A short trench was first dug with a hoe, and then, from the opposite side, an adjacent trench was dug. The loose earth from the second trench was piled into the first, in which the manioc was then planted. Each pair of trenches was made with about fifty hoe strokes.

244 Shoots for planting were obtained by cutting sections from the stalks
242 of old manioc plants. About ten shoots were planted in each hole by thrusting them at an angle into the loose earth. The gardener tried to plant the stems deeply so that the developing tubers would receive maximum moisture. Slipshod gardeners, however, often thrust them in lightly and heaped earth around the stems. The shoots were inserted at slightly different angles to minimize the tangle of stems and thus facilitate the harvesting, but all shoots pointed in a general westerly direction. Quain was told that if they were planted otherwise, the wind would break the growing stalks.

243 The procedure for planting maize was somewhat simpler. The gardener brought a large container of seed corn and a jug of water to the area to be planted. He soaked some of the kernels, and then put them in a small gourd which he carried with him. Small holes, three to four inches deep, were dug with a digging stick (*mica*) or knife blade in the open spaces between the manioc holes. Into each hole three or four kernels were dropped. A small pile of the loose earth that had just been dug up remained next to the depression in which the corn was planted. This served to trap the early rains. The digging stick and knife were the only implements used in maize planting, whereas only the hoe was used to plant manioc.

244 Men planted manioc; the women were said by the men to "not know
462 how." Indicative of the importance of manioc, the word for planting refers only to manioc planting. Thus, a man who told Quain that he had finished his planting went to his garden the next day to put in sweet potatoes. Similarly, Quain was told that women do not "plant." He soon learned, however, that women could plant other crops, but, with the exception of cotton, it was always done under the supervision of the men.

[241] The most active horticultural role of the women was harvesting. The
[462] wife of the gardener went to his plot to dig up manioc and pick vegetables, which she carried back to the village in a basketry container balanced on her head. If the gardener had no wife, the female relative in his household who prepared his food brought in his crop.

1:Murphy and Quain E-4,5 (1938) 1955
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773 gather some vegetable dye in a tree in which he had put a snake. The wily nephew made designs on his leg with the dye which caused the snake to fall out of the tree. He returned home and resumed his relations with his uncle's wife.

Jemenary then ordered Kelenewary to cross a river in which there was a fish that would surely eat him. The nephew suffered some bites, but these he cured by smearing with another vegetable dye. The infuriated uncle then sent him to the village of Rain, Kelenewary's cross-cousin, to get a highly prized wood which Rain guarded closely. Kelenewary arrived at Rain's village and repeatedly urged Rain to have sexual intercourse with his wife. After many wakeful nights, the couple, exhausted, fell into deep sleep. Kelenewary stole the wood, and returned to his uncle's house, where he continued to sleep with his uncle's wife.

Later, when the two men were building an eagle cage, Kelenewary, who was sitting on top of it, angered his uncle by saying that the eagle was no larger than one of his wife's pubic hairs. The enraged Jemenary released the vertical poles in the framework of the structure, catapulting the insolent nephew through the air and into the branches of a tree. Kelenewary was hurt, and Nane, a creature having a human form but capable of flying, carried him to his village. Under Nane's care, he drank medicines that restored him to health and caused him to grow to a tremendous size. The uncle, in despair, created the deer with the intention of having it kill his nephew. Kelenewary, however, lassoed the animal with his armband, and it killed the uncle instead. The opposition thus removed, the nephew returned to the embraces of his dead uncle's wife.

Lore and Learning

821 [775] The cosmology of the Trumaí was not very elaborate. Many stars and constellations were known and named. As noted above, the Milky Way entered into their beliefs of an after-life. Special attention was also given to the Hesperides, which may be the constellation that dates their ceremonial season at the end of the rains. Quain was told by Thomas [241] [805] Young, the missionary, that the planting time was determined by astral phenomena. Quain was not able to confirm this, but he noted that the Trumaí knew the proper time for burning the felled brush. This knowledge was important as the rains arrive suddenly, and once the brush becomes wet it is almost impossible to fire.

805 824 825 Flora and fauna also served as markers of seasonal passage. One such sign was an insect that issued a shrill and pleasant whistle from dusk until far into the night in the weeks immediately preceding the rainy season.

1:Murphy and Quain E-4,5 (1938) 1955
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a certain point at least, the take increases geometrically with the number of persons participating.

In gardening, also, which was not practiced collectively, their small number decreased Trumaí security. It was common for nearly all the village men to plant their gardens in clearings adjacent to those of their neighbors. Obviously, if one part of such a single, extended clearing was improperly fired, or if the crops were destroyed by armadillos or wild pigs, the whole village might be without food. Crop failure for a variety of causes is common in the tropical forests, but most aboriginal communities in South America have several separated garden clearings, each owned by an individual or extended family. If one garden fails, the family can, in a period of emergency, reap from others. Oberg relates that the Trumaí once had to turn for food to the Kamayura,[4] perhaps because of the failure of the village clearing.

It is, of course, possible that in the past the Trumaí organized their gardens along the more rational lines of the Kamayurá;[5] and it is also possible that they never made a proper ecological adaptation subsequent to their arrival in the upper Xingú region. But lacking information on their economy prior to their decimation, we cannot make any firm statement on these points. However, it is certain that, despite their small numbers, the individual Trumaí could have cleared and planted much more land. The average size of the gardens observed by Quain was one-half acre, and this area had to feed up to four people. Many men also had old gardens which were planted only to manioc. According to Quain's calculations, the total acreage of Trumaí gardens was only a little over thirteen. Since yields from forest soils are not high, it is evident that this very small area must have barely met the needs of a population of 43 persons. Manifestly, the Trumaí did not work hard enough; and it seems evident that their lack of application did more to impoverish them than any other single factor.

If the other upper Xingú tribes are used as criteria to establish what Trumaí society was like before its decline, some very serious dysfunctions within Trumaí social structure soon become apparent. To be sure, such a comparison is an arbitrary procedure; and it is only invoked here for its heuristic value. Since village and house patrilocality is the usual mode of residence among the Trumaí, a household similar to that of the Kamayurá, and with like functions, might be expected and might indeed have existed in the past. However, the Trumaí death rate in 1938 was so high that these units disintegrated before they had gone beyond the embryonic stage. House membership was shifting, the number of persons involved small, and leadership nebulous. And since kinship was the principal mechanism for structuring interpersonal relationships in Trumaí society, this lack of a stable, kin-structured unit probably did

[4] Oberg 1953, p. 42. [5] *Ibid.*, p. 48.

T 123 /124 cont./ pocket along the way. A certain amount was obviously missing; I hope it was distributed among various fanciers and taken by them with some success for the skin diseases particularly common among the Yaulapiti.

T 126 Much as we were urged to depart, we still had to undertake at least the most important body measurements and would not relent; seven men were measured in haste, in between our packing, and the only photographic plate left was used for a group shot -- unfortunately ruined later.

T 122 At 9:45 we set out in two canoes, accompanied by four Trumaí. Three times one would have to sleep, they said, before reaching their villages. The Mehinakú could also be reached by way of the canals and only one day was needed to their second village. At 11:00 we landed near the Auetó village, at a place other than where we had left. In the damp T [136] leaves lay huge quantities of giant earthworms; wherever one put his foot, he stepped on them. The path led us to the two huts of the Yaulapiti-Auetó families.

T 361 It is advisable to insert here what Vogel and Perrot reported about the Trumaí villages after their return home from Schingú-Koblenz. They had not caught sight of an Indian, but below the place where the Kulisehu empties into the Kuluëne, on a bank five meters high, they had found one Trumaí village of eight houses and, a kilometer farther east, a second one of five T houses with buildings under construction among them. The 727 Suyá had burned down all the houses and smashed whatever T was left of large pots and utensils. There were plantings of re- 241 markably large size and careful cultivation directly adjoining the T villages. About ten fresh graves were noted; judging from the 764 circular excavation, the corpses had been buried in a squatting position. They seemed to lie deep; at least they were /125/ not uncovered by some superficial subsequent digging. Antonio B had been very alarmed when Perrot said to him: "o doutor Carlos 186 precisa d'uma cabeça /Doctor Carlos wants a head/." It was only with great effort that Antonio had been persuaded to go along on the trip and expose himself to the possibility of meeting the detested Trumaí.

B /201 cont./

*171 194 241 in remote epochs, /202/ for the phonetic softening processes and the disappearance of the initial root-sounds, which are present everywhere in the individual dialects, show a development in the same direction, but in different gradations everywhere with respect to degree and limits, show only equivalence, not conformity, and therefore could have started only after the separation from the basic people. Nevertheless, even the basic peoples have names for the most important useful plants; they are entirely different from one basic people to another, but for the individual basic stock they are common among a greater or lesser number of branches. For the Karaiben /Carib/ I believe I have proved these statements in my Bakaïrí grammar, I can likewise maintain them for the Tupí after more recent studies; for the Nu-Aruak /Arawak/, where the material is inadequate and difficult, I reserve all judgment and merely point out that, on the basis of historical and ethnological data, we must conclude that the Nu-Aruak undoubtedly have an older culture than the Karaiben and certainly the Gês, and probably also an older one than the Tupí. The Trumaí borrowed their names for the most important useful plants in part from the Nu-Aruak, in part from the Tupí.

T [192]

B [181] Thus, we have a contradiction with respect to the common conception: ancient agriculture along with the world view of hunters. The Bakaïrí said to me: "Our grandfathers did not know anything about maize and mandioca, instead they ate earth" -- which the present-day Indians only nibble. In the bagadú legend they say that mandioca was first given as a gift to the campo residents. In the Mato Grosso different stages of development are found side by side: in the case of the Bororó we shall become acquainted with a mighty tribe for whom the cultivation of food plants was an incomprehensible beginning; who, without need, most speedily pulled out and consumed the mandioca roots planted for them, before the roots were scarcely more than thin young shoots -- we recognize from the language and also hear from the tradition that the Trumaí were taught agriculture only recently by their neighbors, and we find among them excellently tended, extensive plantings--

B [773] [261]

BO [241] [153]

T [241] [179]